

Colombia Disasters Earthzine Transcript

My name is James Brenton. I'm a senior Earth Systems Science major at UAHuntsville.

My name is Nathan Bledsoe and I'm an Earth Systems Science major here at UAHuntsville.

My name is Victoria Florence and I'm a senior at Bob Jones High School.

Victoria: In the last few years, fire incidence in Colombian wild areas has increased turning pristine forests into savannahs and sterile. Fire poses a threat to biodiversity, rural communities, and infrastructure. These events issue an urgent need to address fire incidence in Colombia.

Nathan: We used MODIS data from the NASA Earth Observing System satellites, Terra and Aqua. The Fire Information for Resource Management System, commonly known as FIRMS, derived from MODIS products, MOD14 and MYD14. The FIRMS provided us with the coordinates and dates of each fire and thermal anomalies. We then used a fishnet grid to incorporate each fire point into a cell grid area. Land Surface Temperature data which comes from the MODIS products MOD11A1 and MYD11A1 on board the Terra and Aqua satellites. The LST data was extracted with Extract Values To Points to correlate the number of fires within each cell to the average land surface temperature. We then spatially joined the extracted LST data to the same 1km X 1km grid. This allowed us to determine the correlation between fire incidence and land surface temperature.

James: After we calculated the linear regression between the land surface temperature and the number of fires, we found that the trend was quite low. We believe this is due to the small size of the cell. For the next term, we would like to increase the size of the cell from one kilometer to three kilometers in order to increase the number of fires within each cell and improve our statistical accuracy. Also we'd like to include other environmental factors such as precipitations, NDVI, and the elevation in the ignition cause model. Furthermore, we'd also like to include socioeconomic factors such as the proximity of fires to roads, farms, and major cities. Using the ignition cause model, we'll take the correlation values and put those into the dynamic fire risk evaluation. The end products for this project include a map of areas historically affected by fires, and maps with the ability for real time updating on fire vulnerable areas in Colombia. It is expected that this data generated can contribute to heightened visibility of the problem of fires in Colombia. The relevant findings and methodology will be provided to our end partners through relationships established with various regional agencies such as the Corpracion Autonoma Regional Del Valle del Cauca. Particularly important is the free information that SERVIR provides to local decision-makers, scientists, and the general public.

James: (voiceover) We would like thank the efforts and assistance of the following people.

Music used (from iLife Sound Effects): "Jaracanda", "Highlight Reel Long", "Redondo Beach Long", "Fifth Avenue Stroll"